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ORTH AMERICAN AIR DEFENSE COMMAND

Weekly Intelligence Review (U)

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The WIR in Brief

Portion identified as non-responsive to the appeal

Portion identified as non-responsive to the appeal

SEVERAL MISSIONS POSTULATED FOR POSSIBLE LARGE ARRAY NEAR MOSCOW 5
Include early tracking and acquisition of missiles, over-the-horizon detection of missile launches, and space tracking.

Portion identified as non-responsive to the appeal

Space

SOVIETS SILENT ON ZOND 1 SINCE 18 MAY; TOO EARLY TO DRAW CONCLUSIONS 8
Next announcement may come after success -- partial or complete -- can be reported.
SPACE SITUATION REPORT PRESENTED 9
As of 29 June.
NOTE: Item of space interest in preceding section. 9
51-DEGREE INCLINATION OF COSMOS 32 BETTER FOR RECOVERY AND RECONNAISSANCE 9
More hours spent in sunlight over US, more opportunities for recovery.

Portion identified as non-responsive to the appeal

COVER: BEAR bomber with ASM. (OFFICIAL USE ONLY)
NOTE: Pages 22, 23, 24, 26, 27, 30, and 31 of this issue are blank.

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Portion identified as non-responsive to the appeal

Several Missions Postulated for Possible Large Array Near Moscow

A large inverted-V structure which is being built about 35 n.m. southwest of Moscow is suspected of being a radar array. If it is an antenna, then it might be used in one or more of the following roles, according to a preliminary analysis by FTD:

- Ballistic-missile early tracking and acquisition.
- Over-the-horizon detection of ballistic missiles.
- Space tracking.

It would probably not be suitable for discriminating incoming warheads from other associated objects in the atmosphere or for final tracking, owing to its distance from the target area and to its apparent low radio frequency.

The large size indicates that the antenna, if that is what the object is, would operate in the VHF region, which would provide a beamwidth of one degree or more for ease in target acquisition. Although this portion of the RF spectrum is very vulnerable to blackout caused by nuclear detonations, the distance of the array from Moscow would be advantageous in reducing this vulnerability.

The structure is roughly 300 feet high by 350 feet long. It has two faces, one facing about 330 degrees azimuth, the other about 150 degrees. The faces appear to be identical and to form identical angles to the vertical. Only the side facing 330 degrees would be used for ballistic-missile acquisition and early tracking; its azimuthal coverage could be about 90 degrees, which would cover all the ICBM threat sectors to Moscow and the northwestern SLBM (submarine-launched ballistic missile) threat sectors to the same target. The centerline of the field of view of the 330-degree azimuth face runs through the central-western US, in which are located the US's ICBM sites.

The side facing 150 degrees could be a separate system for detecting and tracking nonradiating Earth satellite vehicles. The radar parameters for this side might, in this case, differ from those of the other face, but some major radar components could be common to both sides. This side could observe vehicles having equatorial inclinations of 40 degrees and higher, provided that they were at altitudes of more than about 100 n.m. Vehicles in equatorial orbit could be observed when above the line of sight, that is, at altitudes above about 3,000 n.m.

If both sides are used for satellite detection and tracking, the side facing 330 degrees azimuth would be limited to observation of vehicles in polar or near-polar orbits.

The side facing 330 degrees could be used for over-the-horizon detection of missile launchings by means of the HF backscatter method, in which case it could cover the entire US. The Soviets, ridiculing the US's BMEWS on several occasions, have indicated a preference for the longer warning time afforded by over-the-horizon warning methods.

A radar of this size, using state-of-the art components and techniques should provide detection ranges on the order of 1500-2000 n.m. against a 0.1-square-meter target, or about 500 n.m. against a 0.001-square-meter target. The Soviet structure, if it is a phased array, would be more similar to the FPS-85 at Eglin AFB, Florida, than to any other Western antenna.

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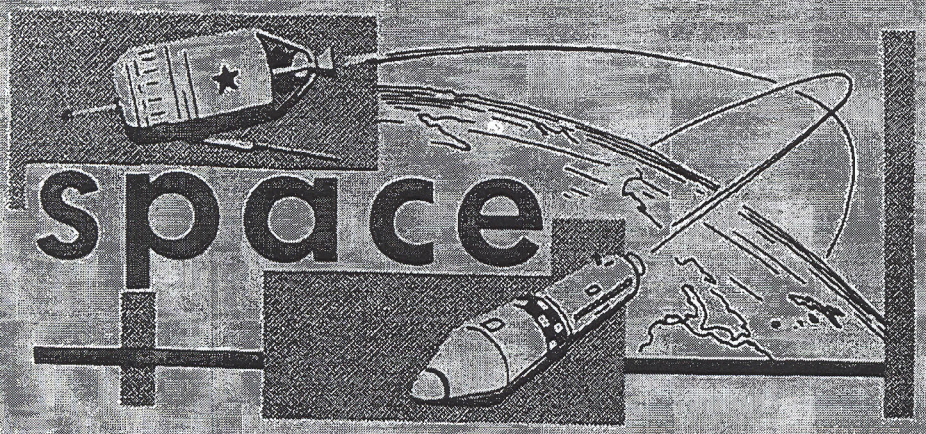

significant intelligence on space developments and trends

Soviets Silent on Zond 1 Since 18 May; Too Early to Draw Conclusions

The last Soviet announcement regarding the space probe Zond 1 was issued 18 May. This announcement said that a second inflight guidance correction had been made and gave a position report. Other TASS announcements issued during the first few days after the 2 April launch of the vehicle and on 15 April and 5 May also gave position reports and stated the number of communications sessions that had been successfully conducted with the probe.

The lack of Soviet announcements since 18 May does not necessarily mean that Zond 1 has failed. It could mean that the Soviets are, figuratively, holding their breaths as the probe heads toward its unannounced target, the planet Venus, with the next communique to be issued only after some announcement can be made of successful accomplishment -- partial or complete -- of the mission.

Zond 1 has been announced by the Soviets only as a space probe, but there are several reasons for believing that it is intended to hit or approach Venus:

- It was launched during one of the brief periods, 19 months apart, when the Earth and Venus are favorably positioned for launch of a Venus probe.
- The time of launch (0243Z) was almost exactly the optimum time for minimum-energy launch on the day chosen (2 April).
- The application of inflight guidance on two occasions suggests that the probe has a definite target; the planet Venus is the most evident one.

This Soviet probe should reach the vicinity of Venus late this month.

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Space Situation Report Presented

The over-all space-vehicle situation as of 29 June was as follows, according to NORAD SPADATS:

	US	UK	Can	USSR	Total
Payloads in Earth orbit	89	2	1	8	100
Payloads in Sun orbit	5			5	10
Payloads in Earth-Moon orbit				1	1
Payloads resting on the Moon	2			1	3
Pieces of debris in Earth orbit	313		2	10	325
Pieces of debris in Sun orbit	4				4
	413	2	3	25	443

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NOTE: The article on page 5, entitled "Several Missions Postulated for Possible Large Array Near Moscow," is of "space" interest.
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51-Degree Inclination Of Cosmos 32 Better For Recovery And Reconnaissance

The 51-degree orbital inclination of Cosmos 32 which was launched from Tyuratam (TT) on 10 June and recovered 18 June was more favorable for photoreconnaissance of the US and gave more opportunities for recovery within the USSR than would a TT Cosmos having the usual 65-degree inclination.

Cosmos 32 was over or near the US for about 9.5 hours of its 8-day flight, in comparison with about 6 hours for a Cosmos with an orbital inclination of 65 degrees; 9 of the 9.5 hours were in sunlight, in comparison with about 3.5 hours for the usual TT Cosmos vehicle.

De-orbit of Cosmos 32 over the USSR would have been possible on 5 passes each day, rather than on the 1 or 2 passes per day on which the usual TT Cosmos could have been recovered.
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